II. CLAIM AMENDMENTS

1. (Currently Amended) A method of determining optical properties of a device under test in two directions in transmission and in reflection, comprising:

splitting an initial measurement signal into at least a first and second measurement signal;

coding the first measurement signal with a first code and the second measurement signal with a second code;

feeding the first coded measurement signal into the device under test in one direction and the second coded measurement signal in another direction;

receiving a signal including a reflected signal from the device under test in response to the first coded measurement signal and a transmitted signal from the device under test in response to the second coded measurement signal; ~~and~~

detecting the reflected and transmitted signals by decoding the received signal with the first and second code; and

utilizing the detected reflected and transmitted signals to determine the optical properties of the device under test.

2. - 6. (Cancelled)

7. (Previously Presented) The method of claim 1, further comprising:

deriving a first and second reference signal from the first and second coded measurement signals, respectively; and

superimposing the first and second reference signals on the reflected and transmitted signals, respectively.

8. (Currently Amended) A software program or product, ~~preferably stored~~ embodied on a computer readable medium, for executing the method of claim 1 when run on a data processing system such as a computer.

9. (Currently Amended) A measurement setup for determination of optical properties of a device under test in both directions in transmission and in reflection, comprising:

a device for splitting a measurement signal into at least a first and second measurement signal;

coding devices for coding the first measurement signal with a first code and a second measurement device with a second code;

feeding elements feeding the first measurement signal into the device under test from one direction and the second coded measurement signal in another direction; and

receiving elements for receiving a signal including a reflected signal from the device under test in response to the first coded measurement signal and a transmitted signal from the device under test in response to the second coded measurement signal, and for detecting the reflected and transmitted signals by decoding the received signal with the first and second code to determine the optical properties of the device under test.

10. (Previously Presented) The setup of claim 9,

wherein the coding device further comprises a switch sequentially feeding one part of the measurement signal into a first path entering the device under test from the one direction and the other part of the measurement signal into a second path entering the device under test from the other direction.

11. (Cancelled)

12. (Previously Presented) The method of claim 1, wherein coding the first measurement signal with a first code includes modulating the first measurement signal with a first

frequency and coding the second measurement signal with a second code includes modulating the second measurement signal with a second frequency.

13. (Previously Presented) The method of claim 1, further comprising balancing the optical path lengths through the unit under test.

14. (Previously Presented) The method of claim 1, wherein detecting the reflected and transmitted signals is performed by polarization diversity receivers.

15. (Previously Presented) The method of claim 1, further comprising detecting the reflected and transmitted signals using frequency selective detection.

16. (Previously Presented) The setup of claim 9, wherein the coding devices code the first measurement signal with a first code by modulating the first measurement signal with a first frequency and the coding devices code the second measurement signal with a second code by modulating the second measurement signal with a second frequency.

17. (Previously Presented) The setup of claim 9, further comprising:

a reference arm for deriving a first and second reference signal from the first and second coded measurement signals, respectively; and

first and second couplers for superimposing the first and second reference signals on the reflected and transmitted signals, respectively.

18. (Previously Presented) The setup of claim 9, further comprising an adjustment element for balancing the optical path lengths through the unit under test.

19. (Previously Presented) The setup of claim 9, wherein the receiving elements each comprise a polarization diversity receiver.

20. (Previously Presented) The setup of claim 9, wherein the receiving elements detect the reflected and transmitted signals using frequency selective detection.

21. (Currently Amended) A method of determining optical properties of a device under test in two directions in transmission and in reflection, comprising:

splitting an initial measurement signal into at least a first and second measurement signal;

coding the first and second measurement signals by modulating the first measurement signal with a first frequency and the second measurement signal with a second frequency;

feeding the first coded measurement signal into the device under test in one direction and the second coded measurement signal in another direction;

receiving a signal including a reflected signal from the device under test in response to the first coded measurement signal and a transmitted signal from the device under test in response to the second coded measurement signal; ~~and~~

detecting the reflected and transmitted signals using frequency selective detection; and

utilizing the detected reflected and transmitted signals to determine the optical properties of the device under test.